M E M O R A N D U M

TO: Deans and Chairs

FROM: Heather Morgan, Assistant Registrar

DATE: August 26, 2025

SUBJECT: Minor Change Bulletin No. 1

The courses listed below reflect the minor curricular changes approved by the catalog editor since approval of the last Minor Change Bulletin. The column to the far right indicates the date each change becomes effective.

Subject	Course Number	New Revise Drop	Current	Proposed	Effective Date
B A	**100**	**Revise**	**Introduction to Business** 3 ~~Course Prerequisite: MATH 103, 106, 140, 171, 172, 182, 201, 202, or concurrent enrollment allowed, ALEKS score of 40% or higher, or transfer credit for Intermediate Algebra equivalent to MATH 101.~~ Overview of business activities and disciplinary functions found in modern for-profit organizations; introduction to each of Carson College of Business learning goals. Typically offered Fall, Spring, and Summer.	**Introduction to Business** 3 Course Prerequisite: MATH 103, 106, 140, 171, 172, 182, 201, 202, or concurrent enrollment allowed, ALEKS score of 40% or higher, transfer credit for Intermediate Algebra equivalent to MATH 101, or admitted to a minor in the College of Business. Overview of business activities and disciplinary functions found in modern for-profit organizations; introduction to each of Carson College of Business learning goals. Typically offered Fall, Spring, and Summer.	**1-26**
CES	**380**	**Revise**	~~**Immigration and Citizenship in the Global Economy**~~ 3 Examination of past and current notions of immigration and citizenship in North American, Asian, and European countries as defined by government officials, political organizations, community groups, and popular culture.	**Immigration and Citizenship** 3 Examination of past and current notions of immigration and citizenship in North American, Asian, and European countries as defined by government officials, political organizations, community groups, and popular culture.	**8-25**
CHE	**301**	**Revise**	**Chemical Engineering Thermodynamics** 3 Course Prerequisite: CHE 101, CHE 211, and CHEM 345 each with a	**Chemical Engineering Thermodynamics** 3 Course Prerequisite: CHE 101, CHE 211, and CHEM 345 each with a	**8-25**

			C or better or concurrent enrollment; PHYSICS 202 and 212 with a C or better; admitted to the major in Chemical Engineering. ~~Basic concepts and laws; property relationships; compression and liquefaction; phase equilibria; reaction equilibria; applications in stagewise processing~~. Typically offered Fall.	C or better or concurrent enrollment; PHYSICS 202 and 212 with a C or better; admitted to the major in Chemical Engineering. Basic concepts in chemical engineering thermodynamics; First and Second Laws; property relationships; power, compression, and liquefaction. Typically offered Fall.	
CHEM	**161**	**Revise**	**Nuclear Reactor Operations I** 3 Course Prerequisite: CHEM 101 or 105 or concurrent enrollment in either. Foundational topics in reactor operations at the WSU TRIGA 1 MW nuclear research reactor, including nuclear theory, nuclear physics, radiation safety, health physics, reactor physics reactor kinetics, neutron transport theory, reactor auxiliary systems, and federal regulations.	**Nuclear Reactor Operations I** 3 Course Prerequisite: CHEM 101 or 105 or concurrent enrollment in either. Foundational topics in reactor operations at the WSU TRIGA 1 MW nuclear research reactor, including nuclear theory, nuclear physics, radiation safety, health physics, reactor physics reactor kinetics, neutron transport theory, reactor auxiliary systems, and federal regulations. Cooperative: Open to UI degree-seeking students.	**8-25**
CHEM	**162**	**Revise**	**Nuclear Reactor Operations II** 3 Course Prerequisite: CHEM 161 with a C or better. Training at the WSU 1 MW TRIGA nuclear reactor, with continued knowledge development in nuclear reactor theory and operations as preparation for the Nuclear Regulatory Commission licensing exam.	**Nuclear Reactor Operations II** 3 Course Prerequisite: CHEM 161 with a C or better. Training at the WSU 1 MW TRIGA nuclear reactor, with continued knowledge development in nuclear reactor theory and operations as preparation for the Nuclear Regulatory Commission licensing exam. Cooperative: Open to UI degree-seeking students.	**8-25**
COMSTRAT	**285**	**Revise**	~~**Diversity, Equity, Inclusion in Communication Organizations**~~ 3 ~~Core concepts from the world of DEI research applied to daily communications and relationship management in personal and professional settings~~. Typically offered Fall and Spring.	**Culture and Communication in the Workplace** 3 Core concepts from research in workplace culture applied to daily communications and relationship management in personal and professional settings. Typically offered Fall and Spring.	**8-25**

DATA	**121**	**Revise**	**Computational Calculus I** 3 ~~Course Prerequisite: MATH 106 and MATH 108 with a C or better OR a minimum ALEKS math placement score of 83%; CPT S 111 with a B+ or better OR by permission with an AP Exam score in Computer Science Principles of 4 or better~~. Introduction to calculus concepts such as limits, derivatives, and integrals with a focus on computational methods including the application of programing in hands on projects including numerical differentiation, integration, and Taylor series. Typically offered Fall and Spring.	**Computational Calculus I** 3 Course Prerequisite: MATH 106 and MATH 108 with a C or better or a minimum ALEKS math placement score of 83%. Introduction to calculus concepts such as limits, derivatives, and integrals with a focus on computational methods including the application of programing in hands on projects including numerical differentiation, integration, and Taylor series. Typically offered Fall and Spring.	**8-25**
DATA	**219**	**Revise**	**Data Structures for Data Analytics** 3 ~~Course Prerequisite: CPT S 121, CPT S 131, or CS 121; DATA 115 or concurrent enrollment.~~ Programming techniques including data structures, sorting and searching, object-oriented design, and an introduction to algorithmic analysis. Typically offered Fall and Spring.	**Data Structures for Data Analytics** 3 Course Prerequisite: CPT S 121, CPT S 131, CS 121 or DATA 122; DATA 115 or concurrent enrollment. Programming techniques including data structures, sorting and searching, object-oriented design, and an introduction to algorithmic analysis. Typically offered Fall and Spring.	**8-23**
DATA	**422**	**Revise**	**Corporate Data Analytics** 3 ~~Course Prerequisite: DATA 324; STAT 360; STAT 435 or concurrent enrollment; admitted to the major in Data Analytics; junior standing~~. Project-based class that integrates the main aspects of data analytics.	**Corporate Data Analytics** 3 Course Prerequisite: DATA 324; STAT/DATA 360; STAT/DATA 435 or concurrent enrollment; admitted to the major in Data Analytics; junior standing. Project-based class that integrates the main aspects of data analytics.	**8-25**
DATA	**424**	**Revise**	**[CAPS] [M] Data Analytics Capstone** 3 ~~Course Prerequisite: CPT S/CS 315 or DATA 319; STAT 360; STAT 435 or 437, either with concurrent enrollment; CPT S 451/CS 351 or concurrent enrollment, or DATA 324 or concurrent enrollment; admitted to the~~	**[CAPS] [M] Data Analytics Capstone** 3 Course Prerequisite: CPT S/CS 315 or DATA 319; STAT/DATA 360; DATA 422; STAT/DATA 435 or 437, or concurrent enrollment; admitted to the major in Data Analytics; junior standing. Team-based	**8-25**

			~~major in Data Analytics; junior standing.~~ Team-based project that integrates the main aspects of data analytics.	project that integrates the main aspects of data analytics.	
ENGLISH	**201**	**Revise**	**[WRTG] Writing and Research** 3 Course Prerequisite: ENGLISH 101, 105, or 298. Designed to develop students' researching skills for writing across the disciplines. Typically offered Fall, Spring, and Summer.	**[WRTG] Writing and Research** 3 Course Prerequisite: ENGLISH 101, 105, or 298. Designed to develop students' researching skills for writing across the disciplines. Credit not granted for both ENGLISH 201 and 298. Typically offered Fall, Spring, and Summer.	**8-25**
ENGLISH	**298**	**Revise**	**Writing and Research Honors** 3 Course Prerequisite: Must be an Honors student. Critical thinking, research, and advanced writing for Honors College students. Typically offered Fall and Spring.	**Writing and Research Honors** 3 Course Prerequisite: Must be an Honors student. Critical thinking, research, and advanced writing for Honors College students. Credit not granted for both ENGLISH 298 and 201. Typically offered Fall and Spring.	**8-25**
ENGLISH / WGSS	**317**	**Revise**	~~**Gay and Lesbian Literature**~~ 3 ~~Gay and lesbian literature with focus on the history of homosexual literature and exploration of current authors.~~ (Crosslisted course offered as ENGLISH 317, WGSS 317.) Typically offered Spring.	**Queer Literature** 3 Queer literature with focus on the history of literature about minoritized genders and sexualities and exploration of current authors. (Crosslisted course offered as ENGLISH 317, WGSS 317.) Typically offered Spring.	**8-25**
FS	**402**	**Revise**	**Industrial Fermentations** 3 ~~Course Prerequisite: CHEM 370 or MBIOS 303; MBIOS 101 or 305.~~ Science and technology associated with industrial-scale food fermentations. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	**Industrial Fermentations** 3 Course Prerequisite: CHEM 470 or MBIOS 303; MBIOS 101 or 305. Science and technology associated with industrial-scale food fermentations. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	**1-26**
FS	**429**	**Revise**	**Dairy Processing** 3 ~~Course Prerequisite: MBIOS 303 or CHEM 370; 4 credits of PHYSICS 101, or PHYSICS 101 and 111.~~ Basic dairy chemistry, microbiology, and processing from cow to consumer; dairy quality, safety,	**Dairy Processing** 3 Course Prerequisite: MBIOS 303 or CHEM 470; 4 credits of PHYSICS 101, or PHYSICS 101 and 111. Basic dairy chemistry, microbiology, and processing from cow to consumer; dairy quality, safety,	**1-26**

			and sanitation; milk components, fluid milk, concentrated milk, cream, butter, ice cream, fermented milk, cheese, and dairy powders. Recommended preparation: FS 110 or VIT ENOL 113. Credit not granted for both FS 429 and FS 529. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	and sanitation; milk components, fluid milk, concentrated milk, cream, butter, ice cream, fermented milk, cheese, and dairy powders. Recommended preparation: FS 110 or VIT ENOL 113. Credit not granted for both FS 429 and FS 529. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	
FS	**432**		**Food Engineering** 3 ~~Course Prerequisite: FS 303; 4 credits of PHYSICS 101, or PHYSICS 101 and 111.~~ Food engineering for improving the efficiency of food processing operations and quality processed food; heat transfer, stream, air-vapor mixtures, refrigeration and fluid flow. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	**Food Engineering** 3 Course Prerequisite: MATH 140 or 171; 4 credits of PHYSICS 101, or PHYSICS 101 and 111. Food engineering for improving the efficiency of food processing operations and quality processed food; heat transfer, stream, air-vapor mixtures, refrigeration and fluid flow. Typically offered Spring. Cooperative: Open to UI degree-seeking students.	**8-25**
FS	**464**	**Revise**	**Food Toxicology** 3 ~~Course Prerequisite: CHEM 370 or MBIOS 303.~~ General principles of toxicological evaluation of chemicals which enter the food chain; toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Credit not granted for both FS 464 and FS 564. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	**Food Toxicology** 3 Course Prerequisite: CHEM 470 or MBIOS 303. General principles of toxicological evaluation of chemicals which enter the food chain; toxicology of food additives, colors, preservatives, drugs, pesticides and natural toxins in foods and risk characterization. Credit not granted for both FS 464 and FS 564. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	**1-26**
FS	**465**	**Revise**	**Wine Microbiology and Processing** 3 ~~Course Prerequisite: CHEM 370 or MBIOS 303; MBIOS 101 or 305.~~ Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Recommended preparation for	**Wine Microbiology and Processing** 3 Course Prerequisite: CHEM 470 or MBIOS 303; MBIOS 101 or 305. Technical principles related to the processing and fermentation of wines with an emphasis on microbiology. Recommended preparation for	**1-26**

			graduate students: CHEM 370 or MBIOS 303; MBIOS 304; MBIOS 101 or 305. Credit not granted for both FS 465 and FS 565. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	graduate students: CHEM 370 or MBIOS 303; MBIOS 304; MBIOS 101 or 305. Credit not granted for both FS 465 and FS 565. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	
FS	**475**	**Revise**	**Quality Management Tools for Food Products** 3 ~~Course Prerequisite: FS 302 or concurrent enrollment; FS 303 or concurrent enrollment; STAT 212 or concurrent enrollment.~~ Fundamental concepts for quality management and improvement of bio manufactured goods, and application of principles of statistical process control in a variety of situations and systems. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	**Quality Management Tools for Food Products** 3 Course Prerequisite: FS 442 or concurrent enrollment; FS 443 or concurrent enrollment; STAT 212 or concurrent enrollment. Fundamental concepts for quality management and improvement of bio manufactured goods, and application of principles of statistical process control in a variety of situations and systems. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	**1-26**
HBM	**105**	**Revise**	**Navigating Business Careers** 2 ~~Course Prerequisite: B A 100 with a C or better; MATH 106, 140, 171, 172, 182, 201, 202, or concurrent enrollment allowed, or ALEKS score of 80% or higher~~. Enrollment not allowed if credit already earned in both B A 102 and HBM 101. Establish and clarify major/career goals through career assessments and research on job expectations, employment trends, and essential skills; develop actionable goals and plans to enhance career success; focus on professional development, including the hiring process, resume/cover letter writing, interview strategies, networking, and online branding. Credit not granted for HBM 105 if credit is already earned in both of B A 102 and HBM 101. Typically	**Navigating Business Careers** 2 Course Prerequisite: B A 100 or concurrent enrollment or admitted to a major or minor in the College of Business. Enrollment not allowed if credit already earned in both B A 102 and HBM 101. Establish and clarify major/career goals through career assessments and research on job expectations, employment trends, and essential skills; develop actionable goals and plans to enhance career success; focus on professional development, including the hiring process, resume/cover letter writing, interview strategies, networking, and online branding. Credit not granted for HBM 105 if credit is already earned in both of B A 102 and HBM 101. Typically offered Fall, Spring, and Summer.	**1-26**

			offered Fall, Spring, and Summer.		
MATH	**110**	**Revise**	**Mathematics Acceleration** 1 ~~(0-3) Course Prerequisite: A minimum ALEKS math placement score of 25%. Individualized instruction on mathematical skills to enhance the mathematical background necessary for success in one of MATH 103, 106, or 171.~~ Typically offered Fall and Spring. S, F grading.	**Mathematics Acceleration** 1 Course Prerequisite: A minimum ALEKS math placement score of 78% or concurrent enrollment in MATH 171. Individualized instruction on mathematical skills to enhance the mathematical background necessary for success in MATH 171. Typically offered Fall and Spring. S, F grading.	**8-25**
MATH	**111**	**Revise**	**~~Mathematics Tutorial for MATH 201~~** 1 ~~Student-centered group tutorial focusing on skill improvement for success in MATH 201.~~ Typically offered Fall and Spring. S, F grading.	**Mathematics Tutorial for Pre-calculus** 1 Course Prerequisite: Concurrent enrollment in either MATH 106 or 108. Individualized instruction on mathematical skills to enhance the mathematical background necessary for success in MATH 106 and 108. Typically offered Fall and Spring. S, F grading.	**8-25**
MATH	**300**	**Revise**	**Mathematical Computing** 3 ~~Course Prerequisite: MATH 220, 225, or 230; admitted to the major in Mathematics.~~ Examination of some current computer software for solving mathematical problems. Recommended preparation: MATH 315. Typically offered Fall and Summer.	**Mathematical Computing** 3 Course Prerequisite: MATH 220, 225, or 230. Examination of some current computer software for solving mathematical problems. Recommended preparation: MATH 315. Typically offered Fall and Summer.	**8-25**
MATH	**325**	**Revise**	**Elementary Combinatorics** 3 Course Prerequisite: MATH 220, 225, or 230, each with a C or better. Introduction to combinatorial theory: counting methods, binomial coefficients and identities, generating functions, occurrence relations, inclusion-exclusion methods. ~~Typically offered Fall.~~	**Elementary Combinatorics** 3 Course Prerequisite: MATH 220, 225, or 230, each with a C or better. Introduction to combinatorial theory: counting methods, binomial coefficients and identities, generating functions, occurrence relations, inclusion-exclusion methods. Typically offered Spring.	**8-25**
MATH	**330**	**Revise**	**Methods of Teaching Secondary School Mathematics** 3 ~~Course Prerequisite: MATH 301 or~~	**Methods of Teaching Secondary School Mathematics** 3 Course Prerequisite: MATH 140, 171,	**8-25**

			~~concurrent enrollment.~~ New curricula and pedagogical techniques for secondary school mathematics. Typically offered Fall.	or 202, each with a C or better. New curricula and pedagogical techniques for secondary school mathematics. Typically offered Fall.	
MATH	**403**	**Revise**	**Euclidean and Non-Euclidean Geometry** 3 Course Prerequisite: MATH 301 with a C or better. Geometry as a deductive system of logic; postulational systems; projective and non-Euclidian geometries. ~~Typically offered Odd Years - Fall.~~	**Euclidean and Non-Euclidean Geometry** 3 Course Prerequisite: MATH 301 with a C or better. Geometry as a deductive system of logic; postulational systems; projective and non-Euclidian geometries. Typically offered Fall.	**8-25**
MATH	**431 / 531**	**Revise**	**[DIVR] Intersections of Culture and Mathematics** 3 ~~Course Prerequisite: MATH 301 with a C or better.~~ Gender/ race/ethnicity differences; social consequences; cultural influences on development and learning of mathematics; role of women, people of color in mathematics. Credit not granted for both MATH 431 and 531. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	**[DIVR] Intersections of Culture and Mathematics** 3 Course Prerequisite: MATH 106, 201, 251, or higher, each with a C or better, or a minimum ALEKS math placement score of 80%. Gender/race/ethnicity differences; social consequences; cultural influences on development and learning of mathematics; role of women, people of color in mathematics. Credit not granted for both MATH 431 and 531. Offered at 400 and 500 level. Typically offered Fall. Cooperative: Open to UI degree-seeking students.	**8-25**
MATH	**440 / 540**	**Revise**	**~~Applied Mathematics I: PDEs~~** 3 Course Prerequisite: MATH 315. Applied partial differential equations; Fourier series; Bessel functions and Legendre polynomials as harmonics for disks and balls; Laplace, heat, and wave equations; separation of variables and D'Alambert's formula. Required preparation must include differential equations. Credit not granted for both MATH 440 and MATH 540. Offered at 400 and 500 level. ~~Typically offered Fall, Spring, and Summer.~~	**Applied Partial Differential Equations** 3 Course Prerequisite: MATH 315. Applied partial differential equations; Fourier series; Bessel functions and Legendre polynomials as harmonics for disks and balls; Laplace, heat, and wave equations; separation of variables and D'Alambert's formula. Required preparation must include differential equations. Credit not granted for both MATH 440 and MATH 540. Offered at 400 and 500 level. Typically offered Fall and	**8-25**

			Cooperative: Open to UI degree-seeking students.	Summer. Cooperative: Open to UI degree-seeking students.	
MATH	**441 / 541**	**Revise**	~~**Applied Mathematics II: Complex Variables**~~ 3 Course Prerequisite: MATH 315. Complex numbers and complex-valued functions of one complex variable; analytic functions and Cauchy-Riemann equations; differentiation and contour integration; Cauchy integral theorem; Taylor and Laurent series; residues; conformal mapping; applications to potential theory. Required preparation must include differential equations. Credit not granted for both MATH 441 and MATH 541. Offered at 400 and 500 level. ~~Typically offered Odd Years - Spring.~~ Cooperative: Open to UI degree-seeking students.	**Complex Variables** 3 Course Prerequisite: MATH 315. Complex numbers and complex-valued functions of one complex variable; analytic functions and Cauchy-Riemann equations; differentiation and contour integration; Cauchy integral theorem; Taylor and Laurent series; residues; conformal mapping; applications to potential theory. Required preparation must include differential equations. Credit not granted for both MATH 441 and MATH 541. Offered at 400 and 500 level. Typically offered Even Years - Spring. Cooperative: Open to UI degree-seeking students.	**8-25**
MATH / CPT S	**453**	**Revise**	**Graph Theory** 3 Course Prerequisite: MATH 220, 225, or 230. Graphs and their applications, directed graphs, trees, networks, Eulerian and Hamiltonian paths, matrix representations, construction of algorithms. Required preparation must include linear algebra. Recommended preparation: MATH 301. (Crosslisted course offered as MATH 453, CPT S 453.) ~~Typically offered Fall.~~ Cooperative: Open to UI degree-seeking students.	**Graph Theory** 3 Course Prerequisite: MATH 220, 225, or 230. Graphs and their applications, directed graphs, trees, networks, Eulerian and Hamiltonian paths, matrix representations, construction of algorithms. Required preparation must include linear algebra. Recommended preparation: MATH 301. (Crosslisted course offered as MATH 453, CPT S 453.) Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	**8-25**
MED CLIN	**541**	**Revise**	~~**Clinical Rotation - Radiology**~~ V 2-4 May be repeated for credit; cumulative maximum 12 credits. Course Prerequisite: MED CLIN 524; exceptions granted by the Associate Dean for Curriculum or designee. Medical imaging modalities and imaging-guided treatments,	**Clinical Rotation - Diagnostic Radiology** V 2-4 May be repeated for credit; cumulative maximum 12 credits. Course Prerequisite: MED CLIN 524; exceptions granted by the Associate Dean for Curriculum or designee. Medical imaging modalities and imaging-guided	**8-25**

			including patient preparation, risks, costs, and accuracies. H, NH, S, F grading.	treatments, including patient preparation, risks, costs, and accuracies. H, NH, S, F grading.	
MED CLIN	**578**	**Revise**	~~**Surgery - General Surgery**~~ V 2-4 May be repeated for credit; cumulative maximum 12 credits. Course Prerequisite: MED CLIN 524. Extension of knowledge, skills, and professional attitudes required for the practice of medicine with a focus on disorders commonly encountered by a general, thoracic, vascular, trauma, or acute care surgeon. H, NH, S, F grading.	**Surgery - Advanced General Surgery** V 2-4 May be repeated for credit; cumulative maximum 12 credits. Course Prerequisite: MED CLIN 524. Extension of knowledge, skills, and professional attitudes required for the practice of medicine with a focus on disorders commonly encountered by a general, thoracic, vascular, trauma, or acute care surgeon. H, NH, S, F grading.	**8-25**
MED CLIN	**587**	**Revise**	~~**Clinical Rotation - Public Health**~~ V 2-4 Course Prerequisite: MED CLIN 524; exceptions granted by the Associate Dean for Curriculum or designee. Introduction to the knowledge, skills, and range of problems that public health officers encounter. H, NH, S, F grading.	**Virtual - Public Health** V 2-4 Course Prerequisite: MED CLIN 524; exceptions granted by the Associate Dean for Curriculum or designee. Introduction to the knowledge, skills, and range of problems that public health officers encounter. H, NH, S, F grading.	**8-25**
MED FMS	**513**	**Revise**	~~**Foundations of Medical Science VI**~~ 11 (5-12) Course Prerequisite: MED FMS 512. Foundational rheumatology; skin system; musculoskeletal system; clinical immunology; clinical skills. S, F grading.	**Multisystem Disease and Advanced Clinical Reasoning** 11 (5-12) Course Prerequisite: MED FMS 512. Foundational rheumatology; skin system; musculoskeletal system; clinical immunology; clinical skills. S, F grading.	**8-25**
MED LMH	**512**	**Revise**	**Administration of Groups** 1 Course Prerequisite: MED LMH 511. Identification and analysis of physician participation in leadership, advocacy, and innovation from the patient level to the national level in both public and private sectors. S, F grading.	**--N/A--**	**8-26**
MED LMH	**533**	**Revise**	**Preparing for a Personal and Professional Life in Medicine** 1 Course Prerequisite: MED LMH 532. Completion and presentation of capstone project;	**--N/A--**	**8-26**

			creation of coalitions and synthesis as part of personal leadership development plan; includes application of knowledge and experience from coursework, clerkships and/or healthcare-related volunteer activities. H, S, F grading.		
MPS	**587**	**Revise**	**Advanced Topics in Plant Biochemistry** ~~1~~ May be repeated for credit; cumulative maximum 7 credits. Methods of plant phenotyping.	**Advanced Topics in Plant Biochemistry** V 1-3 May be repeated for credit; cumulative maximum 7 credits. Methods of plant phenotyping.	**8-25**
NURS ADV	**523**	**Revise**	**Nursing Education: Curriculum Design** 3 ~~Course prerequisite: Admitted to Nurse Educator Certificate Plan.~~ Synthesis and application of adult learning theory and curriculum design models in academic and practice, including professional education standards, accreditation and regulatory processes, and competency-based education models in nursing education. (Formerly NURS 523.)	**Nursing Education: Curriculum Design** 3 Course prerequisite: Admitted to Nursing graduate program or Nurse Educator Certificate Plan. Synthesis and application of adult learning theory and curriculum design models in academic and practice, including professional education standards, accreditation and regulatory processes, and competency-based education models in nursing education.	**8-25**
NURS ADV	**565**	**Revise**	**Information Management for Systems Leaders** 3 ~~Course Prerequisite: NURS ADV 576; admission to Nursing graduate program.~~ Application/evaluation of nursing informatics; information systems to support clinical research, practice, administration, and education. Required preparation must include competency in word processing/spreadsheets. (Formerly NURS 565.)	**Information Management for Systems Leaders** 3 Course Prerequisite: Admission to Nursing graduate program. Application/evaluation of nursing informatics; information systems to support clinical research, practice, administration, and education. Required preparation must include competency in word processing/spreadsheets.	**8-25**
SOC	**305**	**Revise**	~~**Degree and Careers** 1 Introduction to the major or minor, degree or minor requirements, resources for degree planning, graduate degrees, and careers for sociology majors and minors.~~	**Preparing for Internships and Sociology Careers** 1 Explore career options, develop professional materials, and learn strategies for internship and job searching, networking, and interviewing; emphasis is placed on connecting academic training	**1-26**

				to real-world opportunities and career paths.	
SOE	**518**	**Revise**	**Computing Essentials for Geoscience Graduate Students** 3 Basic proficiency using computational tools in geoscience for reading, writing, analysis of large datasets, modeling of processes, and supporting interpretations. Typically offered Odd Years - Fall.	**Computing Essentials for Geoscience Graduate Students** 3 Basic proficiency using computational tools in geoscience for reading, writing, analysis of large datasets, modeling of processes, and supporting interpretations. Typically offered Odd Years - Fall. Cooperative: Open to UI degree-seeking students.	**8-25**
SOE	**592**		**Advanced Topics in Environmental and Natural Resource Sciences** V 1-4 May be repeated for credit; cumulative maximum 6 credits. Typically offered Fall and Spring.	**Advanced Topics in Environmental and Natural Resource Sciences** V 1-4 May be repeated for credit; cumulative maximum 6 credits. Typically offered Fall and Spring. Cooperative: Open to UI degree-seeking students.	**8-25**
STAT	**419**	**Revise**	**Introduction to Multivariate Statistics** 3 Course Prerequisite: MATH 220 or 225; one 300-400-level STAT. Introductory course covering multidimensional data, multivariate normal distribution, principal components, factor analysis, clustering, and discriminant analysis. Typically offered Fall and Spring.	**Introduction to Multivariate Statistics** 3 Course Prerequisite: MATH 220, 225, or 230; one 300-400-level STAT. Introductory course covering multidimensional data, multivariate normal distribution, principal components, factor analysis, clustering, and discriminant analysis. Typically offered Fall and Spring.	**8-25**
STAT	**423**	**Revise**	**Statistical Methods for Engineers and Scientists** 3 Hypothesis testing; linear, multilinear, and nonlinear regression; analysis of variance for designed experiments; quality control; statistical computing. Recommended preparation: One 3-credit 300-level STAT course. Credit not granted for both STAT 423 and STAT 523. Credit not normally granted for both STAT 423 and 430. Offered at 400 and 500 level. Typically offered Fall and Spring.	**Statistical Methods for Engineers and Scientists** 3 Course Prerequisite: MATH 140, 171, or 202, each with a C or better, or MATH 172 or 182. Hypothesis testing; linear, multilinear, and nonlinear regression; analysis of variance for designed experiments; quality control; statistical computing. Recommended preparation: One 3-credit 300-level STAT course. Credit not granted for both STAT 423 and STAT 523. Credit not normally granted for both STAT 423 and	**8-25**

				430. Offered at 400 and 500 level. Typically offered Fall and Spring.	
STAT / DATA	**435**	**Revise**	**[M] Statistical Modeling for Data Analytics** 3 (2-2) ~~Course Prerequisite: STAT 360 or STAT 370, either with a C or better.~~ Multiple linear regression with model selection, dealing with multicollinearity, assessing model assumptions, the LASSO, ridge regression, elastic nets, Loess smoothing, logistic regression, Poisson regression, and the application of the bootstrap to regression modeling. (Crosslisted course offered as STAT 435, DATA 435.) Typically offered Fall.	**[M] Statistical Modeling for Data Analytics** 3 (2-2) Course Prerequisite: STAT/DATA 360 or STAT 370, either with a C or better. Multiple linear regression with model selection, dealing with multicollinearity, assessing model assumptions, the LASSO, ridge regression, elastic nets, Loess smoothing, logistic regression, Poisson regression, and the application of the bootstrap to regression modeling. (Crosslisted course offered as STAT 435, DATA 435.) Typically offered Fall.	**8-25**
STAT / DATA	**437**	**Revise**	**High Dimensional Data Learning and Visualization** 3 ~~Course Prerequisite: STAT 435.~~ Data visualization, metric-based clustering, probabilistic and metric-based classification, algebraic and probabilistic dimension reduction, scalable inferential methods, analysis of non-Euclidean data. (Crosslisted course offered as STAT 437, DATA 437.) Typically offered Spring.	**High Dimensional Data Learning and Visualization** 3 Course Prerequisite: STAT/DATA 435. Data visualization, metric-based clustering, probabilistic and metric-based classification, algebraic and probabilistic dimension reduction, scalable inferential methods, analysis of non-Euclidean data. (Crosslisted course offered as STAT 437, DATA 437.) Typically offered Spring.	**8-25**